

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-11 (Canceled)

12. (Previously Presented) A system for forming a flared end of a flexible tube, comprising:

a heater comprising a contact heating structure with a contact heating surface for contacting and heating an entire circumference of an end of the tube and wherein the remainder of the flexible tube remains unheated;

a flare forming die including a clamp for clamping an unheated portion of the flexible tube adjacent the heated end of the tube; and
a mandrel.

13. (Original) The flare forming system of Claim 12, wherein the heater comprises a contact heating receptacle adapted for uniformly contact heating the circumference of the end of a flexible tube.

14. (Original) The flare forming system of Claim 12, wherein the heater comprises a heater structure, a heating element in thermal contact with the heater structure comprising a contact heating receptacle, and a controller to control the heating element to heat the heater structure to a desired temperature.

15. (Original) The flare forming system of Claim 14, wherein the heater structure comprises a plurality of contact heating receptacles.

16. (Original) The flare forming system of Claim 15, wherein the plurality of contact heating receptacles comprises heating receptacles adapted for receiving a plurality of sizes of ends of flexible tubes.

17. (Previously Presented) The flare forming system of Claim 12, wherein the flare forming die comprises a tube receptacle comprising a clamping portion and a flare forming portion, said clamping portion for providing said clamp for clamping said unheated portion of the flexible tube.

18. (Previously Presented) The flare forming system of Claim 12, wherein the flare forming die comprises a top die unit and a bottom die unit which form a plurality of tube receptacles.

19. (Previously Presented) The flare forming system of Claim 18, comprising:
a plurality of mandrels.

20. (Original) The flare forming system of Claim 12, comprising:
a plurality of mandrels arranged on a mandrel press.

21. (Currently Amended) The flare forming system of Claim 20, comprising:
at least a first mandrel spring mounted on the mandrel press to apply an axial spring compressive force to bias an axial position of the first mandrel relative to the mandrel press.

22. (Original) The flare forming system of Claim 21, comprising:
a second mandrel, rigidly mounted on the mandrel press.

23. (Previously Presented) The flare forming system of Claim 12, wherein:

the heater comprises a plurality of contact heating receptacles adapted to receive and contact heat flexible tubes in a plurality of different sizes;

the flare forming die comprises a plurality of tube receptacles adapted to receive flexible tubes in the plurality of different sizes; and

the mandrel is one of a plurality of mandrels arranged in a mandrel press, the plurality of mandrels being adapted for forming flares in the ends of flexible tubes in the plurality of different sizes.

24. (Currently Amended) The flare forming system of Claim 23, comprising:
a first mandrel spring mounted on the mandrel press by a spring applying an axial force on the first mandrel, and a second mandrel, rigidly mounted on the mandrel press.

25. (Currently Amended) The flare forming system of Claim 24, wherein the first mandrel and the second mandrel are each in respective tube stop positions when the mandrel press is in a preparatory position, the first mandrel positioned at its tube stop position by said spring.

26. (Original) The flare forming system of Claim 24, wherein the first mandrel and the second mandrel each move through respective flare forming distances when the mandrel press is moved through a flare forming stroke.

27. (Currently Amended) The flare forming system of Claim 18, comprising a tube receptacle lock-out device to prevent insertion of a tube into one of said plurality of tube receptacles that is not to be used.

Claims 28-34 (Canceled)

35. (Previously Presented) The system of Claim 12, wherein said contacting surface is fabricated of a material selected to prevent the tube end from sticking to said surface and prevent contamination of the tube.

Claims 36-38 (Canceled)

39. (Currently Amended) ~~The system of Claim 12~~ A system for forming a flared end of a flexible tube fabricated of a plastic material, comprising:

a heater comprising a contact heating structure with a contact heating surface for contacting and heating an entire circumference of an end of the tube and wherein the remainder of the flexible tube remains unheated;

a compression flare forming apparatus comprising a flare forming die including a clamp for clamping an unheated portion of the flexible tube adjacent the heated end of the tube, a mandrel and a mandrel press, and

wherein the ~~flexible tube~~ plastic material comprises one of PFA (perfluoroalkoxy), PVDF (polyvinylidene fluoride) or FEP (fluoroethyl propylene), and the heater is configured to heat the surface to a suitable temperature range for pre-heating said plastic material of said end of said flexible tubing prior to compression forming of a flare.

40. (Previously Presented) The system of Claim 12, wherein the flare-forming die and mandrel are not actively heated or cooled.

41. (Previously Presented) The system of Claim 12, wherein the portion of the mandrel inserted into the end of the flexible tube is a one-piece mandrel.

42. (Previously Presented) A system for forming a flared end of a flexible tube, comprising:

a heater comprising a contact heating structure with a contact heating surface for contacting and heating an entire circumference of an end of the tube and wherein the remainder of the flexible tube remains unheated;

a compression flare forming apparatus comprising a flare forming die including a clamp for clamping an unheated portion of the flexible tube adjacent the heated end of the tube, a mandrel and a mandrel press; and

wherein the heater and compression flare forming apparatus are separate structures arranged in a spaced manner and near each other so that a tube removed from the heater will retain sufficient heat during transfer from the heater to the flare forming apparatus to achieve desired flare forming.

43. (Previously Presented) The system of Claim 42, wherein the flare forming die and the mandrel have substantial heat capacity and are fabricated of material with good thermal conductivity, to facilitate cooling of the tube end during flare formation and with the mandrel pressed in the die in a flare forming position, thereby reducing a flare formation time for the end of the tube to reach a state where it will retain its flared form.

44. (Previously Presented) The system of Claim 42, wherein the flare forming die and the mandrel are fabricated from a material which is inert with respect to the flexible tube end.

45. (Previously Presented) The system of Claim 42, wherein the flare-forming die and the mandrel are not actively heated or cooled.

46. (Previously Presented) The flare forming system of Claim 42, wherein the heater comprises a contact heating receptacle adapted for uniformly contact heating the circumference of the end of a flexible tube.

47. (Previously Presented) The system of Claim 42, wherein the heater comprises a heater structure, a heating element in thermal contact with the heater structure comprising a contact heating receptacle, and a controller to control the heating element to heat the heater structure to a desired temperature.

48. (Previously Presented) The system of Claim 47, wherein the heater structure comprises a plurality of contact heating receptacles.

49. (Previously Presented) The system of Claim 48, wherein the plurality of contact heating receptacles comprises heating receptacles adapted for receiving a plurality of different sizes of ends of flexible tubes.

50. (Previously Presented) The system of Claim 42, wherein the flare forming die comprises a tube receptacle comprising a clamping portion and a flare forming portion, said clamping portion for providing said clamp for clamping said unheated portion of the flexible tube.

51. (Previously Presented) The system of Claim 42, wherein the flare forming die comprises a top die unit and a bottom die unit which form a plurality of tube receptacles.

52. (Previously Presented) The system of Claim 51, comprising:
a plurality of mandrels arranged on the mandrel press.

53. (Currently Amended) The flare forming system of Claim 52, comprising:

at least a first mandrel spring mounted on the mandrel press to apply an axial spring compressive force to bias an axial position of the first mandrel relative to the mandrel press.

54. (Previously Presented) The system of Claim 42, wherein:

the heater comprises a plurality of contact heating receptacles adapted to receive and contact heat flexible tubes in a plurality of different sizes;

the flare forming die comprises a plurality of tube receptacles adapted to receive flexible tubes in the plurality of different sizes; and

the mandrel is one of a plurality of mandrels arranged in a mandrel press, the plurality of mandrels being adapted for forming flares in the ends of flexible tubes in the plurality of different sizes.

55. (Currently Amended) The system of Claim 54, comprising:

a first mandrel spring mounted on the mandrel press by a spring applying an axial force on the first mandrel, and a second mandrel, rigidly mounted on the mandrel press.

56. (Currently Amended) The system of Claim 55, wherein the first mandrel and the second mandrel are each in respective tube stop positions when the mandrel press is in a preparatory position, the first mandrel positioned at its tube stop position by said spring.

57. (Previously Presented) The system of Claim 55, wherein the first mandrel and the second mandrel each move through respective flare forming distances when the mandrel press is moved through a flare forming stroke.

58. (Currently Amended) The system of Claim 51, comprising a tube receptacle lock-out device to prevent insertion of a tube into one of said plurality of tube receptacles that is not to be used.